Activity 9  
What Determines   
& Limits and Atom’s Mass?

Goals…

* Investigate the composition of the atom’s nucleus
* Explain why the atomic masses of some elements are not whole numbers
* Use symbols to represent different isotopes of an element
* Determine the composition of the nucleus of an atom from its isotope symbol
* Calculate the average atomic mass of an element from the percent abundance of its isotopes

CHEM TALK

* PROTON – a positively charged subatomic particle in the nucleus of an atom
  + (1.673 x 10-24g)
* NEUTRON – neutral subatomic particle in the nucleus of an atom
  + (1.675 x 10-24g)
* ISOTOPE – atoms of the same element but different atomic masses due to Click here to enter text.
* A nucleus is held together by the Click here to enter text.
  + Strong at Click here to enter text.distances
  + Always Click here to enter text.
    - Proton – proton
    - Proton – neutron
    - Neutron – neutron
  + Is very Click here to enter text.range
* An atom is held together by the Click here to enter text.
  + Click here to enter text. at Click here to enter text. distances
  + Click here to enter text.at Click here to enter text. distances
  + Acts between charged particles
    - Proton – proton
    - Electron – electron
    - Proton – electron
  + Click here to enter text.
  + Is long range
* Mass of atom is due to the protons and neutrons
* Atomic mass listed on the periodic table is a reflection of the variety of isotopes of an atom that exist
* Only some combinations of p & n are stable
* Beyond 10-14m, the nuclear force has no strength
* Atoms do not occur in nature with an atomic # higher than ­­­­­­­­­­Click here to enter text.
* RADIOACTIVE – an atom that has an Click here to enter text.
* FUSION – nuclei of lighter atoms Click here to enter text.to form nuclei with greater mass
* FISSION – the process of Click here to enter text. into smaller nuclei that releases a large amount of energy